



Unit Title: Hot, Hot, Hot!

Year Level: 9	KLA(s): Science				Duration: 8 weeks (Term 4)
VALUES FRAMEWORK	Healthy Citizen <input type="checkbox"/>	In-formed Citizen <input checked="" type="checkbox"/>	Democratic Citizen <input type="checkbox"/>	Creative Citizen <input checked="" type="checkbox"/>	Eco Citizen <input checked="" type="checkbox"/>

Identify Curriculum

Ways of Working	Knowledge & Understanding
Plan investigations guided by scientific concepts and design and carry out fair tests Select and use scientific equipment and technologies to enhance the reliability and accuracy of data collected in investigations Research and analyse data, information and evidence Draw conclusions that summarise and explain patterns, and that are consistent with the data and respond to the question Reflect on learning, apply new understandings and justify future applications	<i>Energy and Change</i> Energy can be transferred from one medium to another <i>e.g. the stove transfers heat to the pot of water.</i> • Transfer of energy can vary according to the medium in which it travels <i>e.g. some materials are good conductors of heat; light is refracted when it moves from air to water – the pencil appears to bend in a glass of water.</i> • Energy is conserved when it is transferred or transformed <i>e.g. a light bulb converts electrical energy into light energy and also produces heat.</i>

Identify Curriculum Literacies

Identify using the Literacy/ Numeracy Position Papers (and other specific information gathered through “identification processes” in teams.)

10.1 Code Breaker <ul style="list-style-type: none"> Spelling scientific terminology Recognising reference words Using abbreviations and symbols 10.2 Text participant <ul style="list-style-type: none"> Comprehending and composing written and visual texts Defining heat and temperature in terms of movement of particles Interpreting information in diagrams, drawings, tables, charts and graphs Organising information, ideas and arguments 	10.3 Text user <ul style="list-style-type: none"> Using procedures, descriptions, scientific reports, explanations 10.4 Text Analyst <ul style="list-style-type: none"> Evaluating human activities which may impact on the environment
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Context for Learning

Gives a brief background about the unit, sets the scene, provides a focus for learning and explains why this unit is important for learners. Why are you teaching this? Which student needs have been identified and prioritised to support this unit? Is the unit designed to engage students in learning?

In our society there is much discussion about the issue of climate change and global warming. In this unit students will explore the concepts of heat and temperature and then use the knowledge and understanding gained to design a house which is cool in Summer and warm in Winter. The focus will be on improving existing design features of a pre-determined basic structure. This real life context will provide students with knowledge and skills which are essential for a sustainable future. The practical activities used in this unit have been designed to increase student engagement.

School Priorities – may come from:

- Sustainability Action Plan – reference relevant areas
- SELF – eg. Unit tasks supports “co-operative” learning or a specific social skill

Improved literacy - through use of graphic overviews and outlines, workbook exercises involving linking words, reading and comprehension, sequencing exercises, interpreting diagrams, and matching exercises (9/10 action plan).

Improved numeracy - collecting data, tabulating and graphing (9/10 action plan)

EC2 - Take good care of the environment (SELF Overview)

Develop Assessments (Recommended- 3 assessment pieces)

Make Judgements

Type of Assessment Project, assignment ,essay, performance, product, oral/written, presentation variety is the key	What will be assessed? evidence observed in student work to demonstrate assessable elements	When?	Purpose of assessment Summative, diagnostic, formative, assessment for learning	Assessable elements Found on front section of Essential Learnings
<i>Crossword</i> - Scienceworld 2 CD	To ascertain level of students prior knowledge of topic.	Week 1 - Wednesday 8/10/08	Diagnostic	<i>K & U</i> - Energy can be transferred from one medium to another Transfer of energy can vary according to the medium in which it travels Energy is conserved when it is transferred or transformed
<i>Chapter Test</i> - Science World 2 CD	To find evidence of the extent to which students are achieving the knowledge and understanding element of this unit. Multiple choice, short answer, matching, true or false, calculations, labelling	Week 5 - Thursday 6/11/08	Summative	<i>K & U</i> - Energy can be transferred from one medium to another Transfer of energy can vary according to the medium in which it travels Energy is conserved when it is transferred or transformed
<i>Construction Task</i> - Warm/Cool House Scienceworld 2 p. 65	To find evidence of the extent to which students are achieving the investigating, communicating and reflecting elements of this unit. This will be measured by the number of degrees Celsius difference between inside	Week 8 - Thursday 28/11/08	Summative	<i>W W</i> - Plan investigations guided by scientific concepts and design and carry out fair tests Select and use scientific equipment and technologies to

and outside temperatures of the house.

enhance the reliability and accuracy of data collected in investigations
Research and analyse data, information and evidence
Draw conclusions that summarise and explain patterns, and that are consistent with the data and respond to the question
Reflect on learning, apply new understandings and justify future applications

Sequence of Learning to be entered on 'Wondai Term Planning Template' only

Adjustments for needs of learners

Resources

- Vowel clues for some students in crossword.
- Extra scaffolding for assessment where needed.
- Produce and use "Word Wall" and model its use to aid spelling.
- Some students to only complete Check questions and not Challenge questions (Some students to only complete Check questions nos. 1-4).
- .Teacher aide support for some students during practical activities
- Teacher aide assistance for some students during design and construction of house.
- Teacher aide support for some students during test (reading assistance)

Use Feedback

Ways to monitor learning and assessment

Strategies explicitly identified to show how and when feedback will be provided to students.

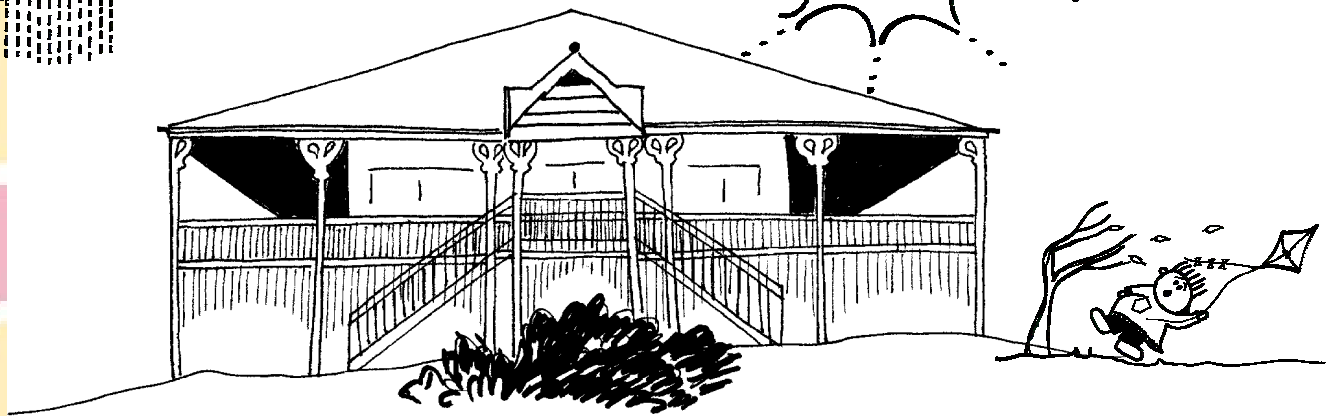
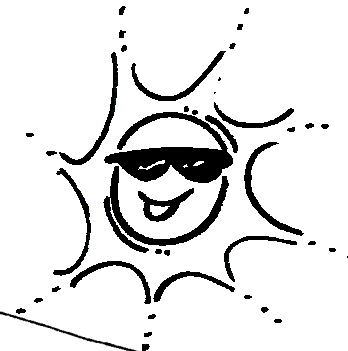
Include formal (reports, grades etc) and informal (1to1 conferencing, annotated work) and from others (peer, self reflection). Also teacher reflection of unit.

- Crossword will be corrected by students in class
- Test results will be given directly to students after marking.
- Small group conferencing will occur informally during design and construction stages of house project.
- Formal grade for house project will be given via criteria sheet at end of project.

Due Date: Thursday 28/11/08

Name:

Warm or Cool?



We are all familiar with the extremes of our Queensland climate and the difficulties in keeping our homes warm in Winter yet cool in Summer. High set homes with verandahs allow air flow in and around them in Summer but are difficult to keep warm in Winter. Conversely, lowset brick homes are well insulated in Winter but can be hot in Summer.

Task

Your task is to use your knowledge and understanding of heat transfer to modify a basic model house for your area so that it is cool in Summer and warm in Winter. Take into account how heat is gained and lost by an average house as shown in the diagram in your text on page 65.